AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

Listing of Claims

1.   (Currently Amended) A method of converting venous blood values to arterial blood values, said method comprising the steps of:

- a) providing values of arterial oxygenation,

- b) measuring and estimating values of acid/base status and oxygenation status in a blood sample, the sample being obtained from **peripheral** venous blood,

- c) converting the venous blood values by applying a mathematical model for deriving blood acid/base status and oxygenation status into estimated arterial blood values.

2.   (Currently Amended) A method ~~values~~ according claim 1, said method measuring and ~~analysing~~ **analyzing** comprising the further steps of:

- d) providing an anaerobic venous blood sample **obtained from peripheral venous blood**,

- e) ~~analyzing~~ **analyzing** said anaerobic venous blood sample for evaluating the acid/base status of the venous blood sample, and

- f) ~~analyzing~~ **analyzing** said anaerobic venous blood sample for evaluating the oxygenation status of the venous blood sample.

3.   (Previously Presented) A method according to claim 1, said method comprising the further step of:

- g) providing the arterial oxygenation such as oxygen saturation, pressure or concentration, said further step being performed at any time in relation to any of the steps a) - c).

4.   (Previously Presented) A method according to claim 3, said method comprising the even further step of :

- h) simulating the blood acid/base status and oxygenation status of an arterial blood sample by use of mathematical modelling.

5.   (Previously Presented) A method according to claim 4, said method comprising still even further steps of

- i) mathematical modelling comprising simulated addition of oxygen, O_2, to and removal of carbon dioxide, CO_2, from the venous blood sample values in a ratio determined by the respiratory quotient,

- j) said mathematical modelling being performed until the simulated oxygen level is equal to the arterial oxygenation level measured or estimated, and

- k1) calculating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

6.   (Previously Presented) A method according to claim 5, said method comprising still even further steps of

- i) mathematical modelling comprising simulated addition of oxygen, O_2, to and removal of carbon dioxide, CO_2, from the venous blood sample values in a ratio determined by the respiratory quotient,

- j) said mathematical modelling being performed until the simulated oxygen level is equal to the arterial oxygenation level measured or estimated, and

- k2) estimating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

7.   (Currently Amended) A method according to claim 1, said method comprising a further step of

- l) providing the arterial carbon dioxide level such as carbon dioxide pressure, total concentration or bicarbonate concentration~~,~~ said further step being performed at any time in relation to any of the steps a) - c).

8.   (Previously Presented) A method according to claim 7, said method comprising an even further step of

- m) simulating the blood acid/base status and oxygenation status of arterial blood sample by use of modelling.

9.   (Previously Presented) A method according to claim 8, said method comprising the still even further steps of

- n) mathematical modelling comprising simulated addition of O_2 to and removing CO_2 from the venous blood sample values in a ratio determined by the respiratory quotient,

- o) said modelling being performed until the simulated carbon dioxide level is equal to the arterial carbon dioxide level measured or estimated, and

- p1) calculating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

10. (Previously Presented) A method according to claim 8, said method comprising the still even further steps of

- n) mathematical modelling comprising simulated addition of O_2 to and removing CO_2 from the venous blood sample values in a ratio determined by the respiratory quotient,

- o) said modelling being performed until the simulated carbon dioxide level is equal to the arterial carbon dioxide level measured or estimated, and

- p2) estimating the acid/base status and the oxygenation of the arterial blood by applying the result of said modelling.

11. (Previously Presented) A method according to claim 10 where the measuring or estimating of the arterial oxygen saturation is done by pulse oximetry.

12. – 26. (Cancelled)